Title of the Research: Measure Theory in Soft Set Setting .

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Key words: Soft set, Soft element, Soft group, Soft homomorphism, Soft quotient group, Soft ring, Soft ideal, Soft topology, Soft continuous, Soft Separation Axioms, Soft Countable Axioms, Soft Compactness, Soft Connectedness, Soft real set, Soft real number and Haar Measure.

Synopsis: Let (G, τ) be a topological group and $\beta(G)$ be collection of all Borel sets of the topological group G. Then $(G, \beta(G))$ is a measurable topological group. Let$\mu : \beta(G) \to [0, \infty]$; μ is called measure if,
(i) $\mu(\phi) = 0$,
(ii) $Ei \subset \beta(G)$ be disjoint collection then $\mu(\cup Ei) = \sum \mu(Ei)$.
μ is called Radon measure if,
(i) $K \subset G$, compact then $\mu(K) < \infty$.
(ii) $E \subset G$ is measurable then $\mu(E) = inf\{\mu(U) : E \subset U,\ U\ is\ open\}$.
(iii) If $U \subset G$ is open then $\mu(U) = sup\{\mu(K) : K \subset U, K\ is\ compact\}$.
A Radon measure is called Haar measure if $\mu(U) > 0$, if U is open and is invariant under left translation. There are rich literatures available on Haar measure and Haar integral on locally compact topological group. Soft set theory has enormous application in various fields to handle various type of uncertainties. Recently soft topological space and soft topological group was introduced and it is nature to investigate the behavior of measure and Haar measure on soft topological group. We want to introduce measure on soft topological group. We also investigate the existence and uniqueness of Haar measure on locally compact soft topological group. We have planned to study the Haar integral on soft topological group.

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